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ABSTRACT

The educational system of Finland is undergoing great reform, and one change is for compulsory inservice teacher education. This study is concerned with inservice education of foreign language teachers. Dimensions of rote-meaningful learning and reception-discovery learning are discussed; teachers preferred the meaningful-discovery type. It seems proper to consider this type of learning a major overall objective of inservice education. Some objectives of inservice education are discussed: subject-matter competence, professional competence and personal attitudes. Professional competence includes mechanical skills, knowledge, transfer, communication and criticism. Personal attitudes include receptivity, responsiveness, appreciation, internalization and characterization. This study aims to assist in organizing inservice education by determining what type of education teachers feel they need. The questionnaire given to teachers asked for their rating of the importance of different content areas of inservice education; it examined their agreement on these points, noted background variables and questioned the responsibility for arranging inservice education. Teachers felt the two most important educational needs were study in a country where the language is spoken and developing the teacher's oral ability. Appendices furnish categories of teacher evaluation, the questionnaire and statistical analysis of the responses. (CHK)

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Anna-Liisa Leino

THE NEED FELT FOR IN-SERVICE EDUCATION BY FOREIGN LANGUAGE TEACHERS

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Anna-Liisa Leino

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Institute of Education
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Preface

I wish to express my gratitude to Professor Erkki A. Niskanen and Jarkko Leino, Ph. D. who have read my manuscript and given me valuable criticism and advice.
I am grateful to Jouko A. Räihä, M.A. from the National Board of Schools for the help I have received. I also owe a debt of gratitude to the Language Teachers' Association and techers of foreign languages in different parts of Finland.
I am grateful for the inclusion of this study in the Research Bulletin series of the Institute of Education, University of Helsinki.
The language of this report, like that of the earlier reports by the writer, has been checked by native speakers of English in the English Language Institute.

October 1975

Anna-Liisa Leino

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1. Introduction

Teacher education consists of pre-service education taking place before the future teacher goes to his first post and in-service education which should be a natural continuation of pre-service education taking place during the professional life of the teacher. The greater the changes are in society in general and in the field of education in particular, the more acute the need for in-service teacher education becomes. Although this need has been recognized, for example, throughout educational literature, there has been very little co-operative, long-range planning of such education. So far it has mainly only consisted of incidental, unsynchronized activities (e.g. Ogletree et al. 1964; Childress 1969; Johnston 1971).

In Finland the whole educational system is undergoing great changes caused by the comprehensive school reform together with the reform in the administration of schools and the new plans for teacher education which have been put forward quite recently (Mietintö 1975). The fact that the reform of teacher education itself lags behind school reform, makes in-service education of teachers very important indeed for the time being. So far there have been two types of compulsory in-service education for teachers. One is based on the

agreement of the terms of work between the state and teachers' organisation when the 5-day school week was introduced. It is given on three Saturdays during the school year. The purpose of the other type of training is to facilitate the introduction of the comprehensive school system. This training is arranged on five days a year during three successive years beginning with the year of the introduction of the comprehensive school system in the municipality. The introduction of the system started with Lapland and Helsinki, for example, has not yet been reached. Satisfaction with this type of compulsory in service training has not been very great among the teachers.

Renko et al. (1973) have been presented criticism of the system from the viewpoint of the educational technology. Among the things criticized were the following:
the way in which the training was planned, the neglect of the individual training needs, the vagueness of the objectives of the training, failure to assess results, the methods that were employed and the system of educator training. An analysis has also been made of the articles published in newspapers or periodicals which criticize the training (Taipale 1974).

Prior to the compulsory further education there was also voluntary in-service education meant for all the teachers of the old school system with the intention of familiarizing the teachers with the new system and creating positive

attitudes toward the school reform. This type of education was arranged in summers. In the winter-time some in-service training programmes were broadcast by radio and TV and their effects invesigated by Karvonen (1970 a, b) and Telama (1970).

Teachers' associations have been arranging voluntary in-service education for their members in the form of various courses, meetings and seminars; in this respect the subject teachers' associations have been particularly active. Courses arranged by them have been very popular among the members, which may be because they have been able to cater for the individual needs and interests better than those programmes shared by all teachers.

This study is concerned with the in-service education of foreign language teachers, which is of prime importance since it is this group of teachers to whom the school reform meant the greatest changes. These changes were caused by the fact that foreign language is not any more taught only to a select minority but to all pupils regardless of aptitude.

1.2. Background of the Study

The same principles that are considered necessary in a classroom situation are also applicable to in-service teacher

education (Ogletree et al. 1964). In other words, one has to define the objectives of teachers education, decide what strategies to use for the achievement of the objectives and know how to evaluate the results. This study is mainly concerned with objectives in in-service education of foreign language teachers.

The ultimate objective in in-service education is, of course, to raise the quality of instruction. In the discussion of different aspects of such a vaguely expressed objective a framework offered by Lahdes (1971 a) is made use of in the following. Lahdes has applied Ausubel's theory of conceptual learning (Ausubel 1968; Ausubel et al. 1969; Klausmeier et al. 1969) to teacher education in his summary of studies concerning young teachers' opinions of the training they have received.

When the dimensions of rote-meaningful learning and reception-discovery learning are applied to teacher education one has to describe ways in which the student teacher adopts didactic knowledge and skills. The first dimension (rote-meaningful) concerns mainly the contents of didactics, that is, the extent to which it possesses the property of reliability. The latter (reception-discovery) concerns the form in which the student teacher adopts didactics, that is, whether what is to be learned is given or identified by the learner himself. Lahdes has presented these two independent dimensions as applied to teacher education as follows (p. 28):

meaningful learning	
The student teacher applies the didactic advice given, and discovers himself generalizations. He relates the generalizations to those in his cognitive structure in a nonarbitrary and substantive way	The student teacher receives didactic advice in the form of generalizations (or theory). He relates the material he received to his cognitive structure in a meaningful way
discovery learning	reception learning
The student teacher applies the didactic advice given. It remains, however, unrelatable offering no basis for generalizations, which would make didactic transfer possible	The student teacher receives didactic advice which does not possess the property of relatability. It does not offer basis for generalizations even if it were memorized and observed accurately
rote learning	

The teachers whose opinions were investigated considered teacher education to have been of reception-rote type, though they would have prefered it to be more meaningful-discovery type. When analyzing the "idealized" teacher education, as described by experts, Lahdes also came to the conclusion that, according to them, learning to teach should be meaningful-discovery learning. It has been assumed (Lahdes 1971b) that emphasis on rote-reception type of learning to teach is due to the short period of time that is spent on teacher education. As a result of this it would seem proper to consider meaningful-discovery type of learning to teach as a major overall objective of in service education. In foreign language teacher education,

learning to teach has evidently also been of the rote-reception type, which according to the present writer's opinion, is seen by the fact that foreign language teachers seem to show very little interest in anything that is not directly applicable to practical classroom situations. What they most often ask for is ready-made prescriptions and concrete advice. This tendency even seems to get some support in literature (e.g. Armstrong 1968; Forrester 1974; Phillips 1975). According to Jakobovits et al. (1974), on the other hand, foreign language teachers should be freed from the helplessness that is seen in exaggerated dependence on methodological strategies, which only leave trivialities to be decided by the teacher. Helping the teachers to free themselves from such helplessness would seem to be the responsibility of in-service education.

Lahdes (1971a) also employed a third dimension, that of general didactics-subject didactics, in his model to explain differences between the opinions of the teachers. According to the present writer's experience, however, those two types of didactics are not opposites but one would seem to be included in the other, namely general didactics would seem to be included in the didactics of a subject, with the area of the latter being wider than that of the former. This is particularly the case with subjects whose didactics are advanced branches of learning like languages, whose didactics have a long tradition within applied linguistics in many countries. It has even been suggested that language

didactics should be an autonomous discipline (Mackey 1973). Consequently the stage of development in the science of language teaching should be recognized in the pre-service as well as in-service education of language teachers and the discussion of the third dimension can be omitted as irrelevant in this context.

In order to be able to move towards meaningful-reception type of learning to teach, the teacher should be aware of the factors that affect pupils' learning. According to Klausmeier et al. (1969) the main groups of such factors are as follows: characteristics of learners, chracteristics of the teacher, subject matter, learner and teacher behavior, group characteristics, characteristics of physical facilities and outside forces.

1.3. Objectives in In-service Education of Foreign Language Teachers

The objectives in in-service education of foreign language teachers in Finland have not been explicitly stated at all. Some information on in-service teacher education in general, has, however, been provided by a committee (Mietintö 1973). The objectives expressed in their report are of the same general, vague quality as objectives expressed in any other official document, which is also true of most of the content areas of in-service education mentioned in the report. These areas are as follows:

-general pedagogical readiness

-objectives, curriculum and planning instruction

-subject-matter

-methods

-evaluation

-instructional material and media

-guidance and counselling

-organisation and adminstration of school

No exact information is, however, available on the exact nature of "general pedagogical readiness", for example. It is pointed out in the report that attention must be given to the problems concerned with the instruction of each individual subject, the specific problems of instruction at different levels of schools and in different types of schools.

New principles of in-service teacher education have been put forward in the report on the work of the Committee of Teacher Education (Mietintö 1975), which was not, however, available when this study was being planned and carried out.

For a more detailed discussion of the objectives of foreign language teacher education, the taxonomy of foreign language of Valette et al. (1972) seems to offer a proper basis. The taxonomy was developed for the purpose of teacher evaluation, consisting of the evaluation of the teacher's personal qualifications and the evaluation of his effectiveness in the classroom. Personal qualifications fall into the categories

of subject-matter competence, professional competence, and personal attitudes. Each of these categories, as well as the teacher's effectiveness in the classroom, which is measured in terms of pupil achievements, falls into sub-categories of stages, in which one can differentiate between internal and external behaviour. The list of teacher evaluation categories is to be seen in Appendix 1.

Subject-matter competence is seen in the teacher's command of the foreign language and his acquaintance with the culture of the country where the language is spoken. In Finland the university has been responsible for this area of the teacher's personal qualifications. An important question in connection with this is whether language teachers learn at the university such skills and knowledge as they need in their work (Pennanen 1967). An investigation into this area has been carried out by Paakko (1974).

Professional competence is seen in the teacher's classroom behaviour, which, up to the present day, has been the responsibility of the so-called "normal" schools. The stages of the area of professional competence are as follows:

Stage 1: Mechanical Skills.

Perception: The teacher is conscious of the exterior conditions of the classroom and pupils.

Reproduction: The teacher speaks clearly and distinctly, he writes legibly on the blackboard and moves around the classroom.

The behaviours at this stage are not specific to foreign language teaching.

Stage 2: Knowledge.

Recognition: The teacher has knowledge of theories, techniques, research and terminology.

Recall: The teacher is able to explain terms concepts and practices related to foreign-language methodology.

At this stage the teacher is familiar with professional literature.

Stage 3: Transfer.

Reception: The teacher applies ideas of others and teaches a lesson according to the format prescribed or suggested by his supervising teacher.

Application: The teacher acts independently, he teaches according to his own lesson plans and is able to write his own excercises and tests.

At this stage the teacher works in accordance with pre-established guidelines.

Stage 4: Communication.

This stage distinguishes the conscientious teacher from the creative teacher. The unimaginative but conscientious teacher can perform at the application level, planning classes and performing activities expected of him. The creative teacher enters into two-way communication with pupils and members of his profession.

Comprehension: The teacher is sensitive to the state of mind of his pupils. He can tell by their responses whether

they have understood or not. He is sensitive also to the concerns of other members of his department.

Self-expression: The teacher is quick to vary classroom activities in response to the changing needs of his pupils. He is able to modify his teaching techniques in an attempt to achieve the objectives. He works harmoniously with his colleagues.

Stage 5: Critisism

Analysis: The teacher is able to look at his teaching as objectively as possible. If he has discovered that something failed to work in the class, he wants to find out why by analyzing the situation.

Synthesis: After discovering possible reasons, the teacher is able to work out another way of approaching the problem.

Evaluation: The teacher is able to evaluate his own effectiveness. This aspect is closely connected with analysis and synthesis.

The stages of professional competence form of hierarchy, with the lower stages being included in the higher ones. According to the writer's experience it has not been possible to reach the stages of communication and criticism with most of the student-teachers in pre-service education. Those stages of Valette et al. (1972) would seem to presuppose meaninful-reception type of learning to teach. As for the lower stages, mechnical skills and transfer have been given a lot of practice in student teaching but, it seems that the stage of knowledge has been a neglected area

in the old system of teacher education. Teachers should have knowledge of the latest developments and experiments in the field of language teaching to be able to move towards the higher stages of professional competence.

The teacher's personal attitudes refer to the affective aspects of his professional activities, which have not been given much attention with cognitive training dominating teacher preparation. The problems connected with the affective objectives are as serious in this field of education as in any other. The stages of the area of teacher attitudes are as follows:

Stage 1: Receptivity

The teacher follows the instructions of those who direct his professional activities. He is open to the material presented.

Stage 2: Responsiveness

The teacher enjoys his work and has a positive attitude towards his profession and the activities involved. He has a tolerance of differences among teaching methods and teachers.

Stage 3: Appreciation

The teacher is a member of professional organizations, he participates in activities designed to improve his command of the foreign language, he attaches value to his professional work.

Stage 4: Internalization

The teacher considers language learning valuable for his pupils and tries to help his pupils have positive learning experiences with the second language. He is dedicated to language teaching as his profession and devotes a great portion of his time to professional activities, reads professional journals, attends meetings and travels abroad.

Stage 5: Characterization

The teacher wants to contribute to the improvement of language teaching, he helps organize meetings, speaks at conventions, writes articles and engages in language-learning research.

The taxonomy of foreign language teacher evaluation, developed by Valette et al. (1972), is useful because it helps give structure to a complex field. On the other hand, there is an overlap between the categories of subject-matter competence, professional competence and personal attitudes. Another question is, of course, whether learning to teach really occurs through the stages suggested in the taxonomy.

In an attempt to raise the quality of instruction the teacher's effectiveness in the classroom, expressed in terms of pupil achievements is, of course, of crucial importance. This aspect falls, however, outside the scope of this study and consequently, will not be discussed any further here.

2. Purpose of the Study and the Problems

This study has to be seen in the wider context of organizing in-service education consisting of the following aspects: planning, decision-making, implementation and evaluation. The plans that we already have for in-service education, as well as other sources (e.g. Valette et al. 1972), were made use of when this study was started. An attempt is made to find out what kind of in-service education foreign language teachers feel they need. We do not have information like this available yet, which is unfortunate, since those involved in different aspects of organizing in-service education for foreign language teachers have to base decisions on their own ideas and intuitions, or on the very general guidelines offered by school authorities. However, it is those in-service programs, which derive their objectives from teacher needs, that have proved the most succesful (Childress 1969; Ogletree et al. 1964). Answers are sought to the following questions:
1. How do foreign language teachers rate the importance of different content areas of in-service education? This problem is directly concerned with planning and decision-making: it is natural that the most important content areas should be given a priority in in-service programs. It is also implicitly concerned with implementation and evaluation since teachers are most likely to base their ratings, at least partly, on those programs which they have already

participated in.

2. To what extent do teachers agree on the importance of different content areas? The problem is most directly concerned with the implementation aspect since information will be available on the areas where differentation of in-service education would be necessary, but it also involves the other aspects of organizing in-service education.

3. Do the backgroud variables which are to be specified in the following explain the way in which the teachers rate different areas? This question is also most directly concerned with the implementation of in-service education but involves the other aspects, too: one has to decide whether it is necessary to plan and arrange different type of in-service education for different types of teachers. The background variables are as follows: the language, the length of the study at the university (as measured by the degree the teachers have), studies taken in education, teaching experience, the length of the time spent in the foreign country and the type of school where the teachers work.

4. Whose responsibility should arranging in-service education mainly be? For any additional information teachers were offered an opportunity to give free comments on in-service education in the questionnaire.

3. The Procedure and Results

3.1. Questionnaire

When developing the questionnaire the following literary sources were made use of: Klausmeier et al. (1969), Valette et al. (1972) and the report on in-service education (Mietintö 1973). An attempt was made to give particular attentation to those areas that were affected by the greatest changes caused by the school reform; thus the majority of items concern the teacher's professional competence. Experts, that is experienced foreign language teachers, were also consulted. They judged the relevance of the questionnaire from the viewpoint of practising teachers. The questionnaire with its instruction is to be seen in Appendix 2.

1 The teacher's subject-matter competence, which is shown by the teacher's command of the foreign language and his acquaintance with the culture of the country where the language is spoken (Valette et al. 1972) is represented by two items:

25. developing the teacher's oral ability
29. study in the country where the language is spoken

Oral ability was included in the questionnaire because, of all the different foreign language skills it is the one that is the hardest for the teacher to keep up by himself. Acquaintance with the culture is best maintained by stay, or preferably, by study in the target country.

II The teacher's professional competence. Since the taxonomy of Valette et al. (1972) of this area was developed for the purpose of evaluating teacher behaviour, the objectives in it were expressed in terms of teacher behaviour, or performance as Valette et al. prefer to call it. There was no indication as to the content by means of which the objectives were to be achieved. Consequently it could not be used as a basis from which to derive content areas of in-service education. The factors presented by Klausmeier et al. (1966) were used instead as such a basis. It could, in fact, be thought that they make the stage of knowledge of the taxonomy more specific.

Subject-matter is represented by the following items:

14. teaching listening comprehension
18. teaching speaking
28. teaching reading comprehension
4. teaching written production

The above mentioned skills represent general objectives of foreign language instruction. Making those skills more specific and deciding the question of priority is included in the following item:

21. objectives of foreign language instruction at different levels

Linguistic studies have played only a minor role in the academic studies of foreign language teachers until very recently. They are, however, going to have an increasing importance in the future (Hirvonen 1974; Mietintö 1972)

and it consequently seems that they should be given proper attention in the in-service education of foreign language teachers at the present. Linguistics were represented by the following two items in the questionnaire:

30. knowledge of general linguistics (e.g. what the language is, how it is studied)
27. knowledge of different varieties of the language (e.g. official language, informal language, slang)

Learner and teacher behaviour

According to Klausmeier et al. (1966) learner behaviour is seen in the way a pupil learns and teacher behaviour in the method he uses. From the interaction of the teacher and student other conditions of the efficiency of learning arise. These include motivation, the management practice and provisions for individual differences among the students. The items of this area are as follows:

26. language learning theories
9. motivating pupils
5. questions concerned with discipline
10. decreasing learning difficulties
37. complementary instruction
15. teaching the foreign language in different courses after streaming has taken place
6. teaching the foreign language to mixed-ability groups
22. teaching the foreign language simultaneously to pupils from different classes

12. differentation
3. pupil-centered activities
23. planning instruction
8. getting familiar with the instruction of other subjects
7. observing foreign language instruction (e.g. in experimental schools or institutes of teacher education)
31. knowledge of research on foreign language learning and teaching

Of the last three mentioned items the following points should be made: Integration of instruction has been greatly emphasized during the past few years and it is also included in the content area of methods in the report on in-service teacher education (Mietintö 1973). Integration of instruction requires familiarity with the instruction of other subjects. It has, in fact, been recommended that foreign language teachers should observe classes in other subjects as well as foreign language classes (e.g. Pillet 1970). The latter can give teachers concrete ideas which they can apply to their own teaching situation. A problematic question has been how to communicate the findings of educational research to teachers (e.g. Childress 1969), which would evidently be the responsibility of in-service teacher education. According to Pillet (1970) the foreign language teacher should be at least a consumer, if no a producer, of research. On the other hand, the highest stage of the taxonomy of teacher attitudes (Valette et al. 1972) seems, to the writer, somewhat unrealistic from the viewpoint of an ordinary foreign

language teacher.

Group characteristics are represented by only one item, the purpose of which is to help pupils acquire social skills:

13. co-operation between pupils

Characteristics of physical facilities are represented by two items of an area where very great changes have taken place during the past few years and for which in-service education has been in particular recommended for foreign language teachers (e.g. Girard 1974; Leamon 1974):

34. using AV-materials
11. new instructional materials

Outside forces:

38. knowledge of the administrative aspects of education
24. knowledge of the Finnish society
1. official plans for curriculum development
36. official plans for reforming education
35. guidance and counselling
33. foreign language instruction in schools to which pupils will go to do further studies, or from which they come

Klausmeier et al. (1969) had two more factors that affect the efficiency of learning namely teacher characteristics, which overlap to some extent with the teacher's personal qualifications as presented by Valette et al. (1972), and pupil characteristics. They are included only to the extent in which they are involved in learner and teacher behaviour. According to the present writer's experience pupil charac-

teristics have been treated more widely in pre-service education than any of the other areas mentioned here.

The third area of the teacher's personal qualifications, as presented by Valette et al. (1972), namely personal attitudes, was omitted owing to the vagueness of the affective area.

III Evaluation. Evaluating pupil performance is, of course, an important part of the teacher's professional competence, although it was not explicitly included in the categories of Valette et al. (1972). The evaluation of pupil achievements has an important place in in-service education (Mietintö 1973). The items included here represent areas where great changes have taken place within the last few years.

2. evaluation of oral ability
16. evaluation of listening comprehension
17. assigning grades
19. testing vocabulary and structures
20. evaluation of reading comprehension
32. evaluation of written production

From the viewpoint of the content validity of the instrument an important question is to what extent the items represent the area to be measured. Answering the question is very difficult owing to the lack of a framework which could be thought to include all the possible objectives in in-service or even pre-service foreign language teacher education. An attempt was, however, made to include such

areas that are considered urgent because of:

- the comprehensive school reform
- reform in the administration of schools
- new teacher education system
- deficiencies in pre-service teacher education
- technical development
- changes in the field of foreign language instruction (e.g. the school leaving examination)

It is to be noted that some items are rather specific (e.g. evaluation of reading comprehension) while others are quite comprehensive (e.g. guidance and counselling) and could have been made more specific. This would, however, have resulted in too great a number of items for the teachers to answer. The teacher's subject-matter competence was represented by only two items because it is reasonable to assume that most of the objectives in this area are either achieved in pre-service education or it is easy for teachers to study them on their own (e.g. enlarging one's own vocabulary).

To get some information on the constancy of the ratings one, randomly selected, item (No 25) was presented twice in the questionnaire. The correlation between the two ratings of the same item was .85.

3.2. Subjects

The randomly drawn sample (N=200) consisted of five percent

of the members of The Finnish Language Teachers' Association. The number of teachers who answered the questionnaire was 117. One questionnaire was returned because the address was unknown; another unanswered questionnaire came from a German teacher who had remained unemployed because of the school reform. The generalizability of the results is limited by the low number of returns, on the other hand, and by the fact that there is no information available on the number of language teachers who do not belong to the Association, on the other.

3.3. Results

1. The means and standard deviations of the items are presented in Table 1 (Appendix 3), which shows the teachers having considered the following items the most important for their in-service education:

29. study in the country where the language is spoken
25. developing the teacher's oral ability
18. teaching speaking
32. evaluation of written production
4. teaching written production
9. motivating pupils
14. teaching listening comprehension

The above mentioned items are specific to the teaching of the foreign languages; they represent both teacher's subject-matter competence and problematic areas in the

field of teaching the foreign language itself. There is a great deal of agreement among the raters on the importance of these items with the exception of item 4.

The least important items were as follows:

8. getting familiar with the instruction of other subjects
24. knowledge of the Finnish society
30. knowledge of general linguistics
38. knowledge of the administrative aspects of education
35. guidance and couselling

The least important items are of a very general nature, none of them being concerned with the foreign language teaching process itself. The fact that general linguistics were not considered to be very important may be due to the teachers' mixing it up with philological studies with which they are likely to be more familiar. The standard deviations of the items tell about a considerable agreement among the raters.

2. The standard deviations (Table 1) show that the following items are the ones of the importance of which there is no great agreement among the teachers:

4. teaching written production
5. questions concerning discipline
6. teaching mixed-ability groups
7. observing foreign language instruction (e.g. in experimental schools or institutes of teacher education)
19. testing vocabulary and structures
22. teaching a foreign language simultaneously to pupils from different classes

The above mentioned are areas where differentiation of in-service education would be necessary.

3. In order to investigate the relationships of the background variables to the way in which the teachers rated the importance of different content areas, the number of the variables had to be reduced. This was done by means of factor-analysis. The correlation matrix is to be seen in Table 2 (Appendix 4), the unrotated factor-matrix in Table 3 (Appendix 5) and the Varimax-rotated factor matrix in Table 4 (Appendix 6). The seven-factor solution was chosen as the basis of further investigation because of the ease of interpretation. The factors are as follows:

Factor I contsists of the following items: pupil-centered activities, motivation, decreasing learning difficulties, differentiation, co-operation between pupils and objectives in foreign language instruction at different levels. It is called a factor of didactic knowledge.

Factor II consists of the following items: new instructional materials, teaching listening comprehension, evaluation of listening comprehension, assigning grades, teaching speaking, testing vocabulary and structures, evaluation of reading comprehension and teaching reading comprehension. It is called a factor of foreign language instruction and evaluation of results.

Factor III consits of getting familiar with the instruction

of other subjects, language learning theories, different varieties of the language, general linguistics, research on foreign language learning and teaching a foreign language in other schools. It is called a factor of linguistic knowledge.

Factor IV consists of teaching written production and evaluation of written production and is called a factor of written production.

Factor V consists of teaching mixed-ability groups, teaching a foreign language in different courses after streaming has taken place, teaching a foreign language simultaneously to pupils from different classes and complementary instruction. All the items represent such situations of foreign language instruction that were created by the comprehensive school reform. It is called a factor of changes caused by the comprehensive school reform.

Factor VI consists of developing the teacher's oral ability and study in the country where the language is spoken. It is called a factor of the teacher's subject-matter competence.

VII factor consists of official plans for curriculum development, planning instruction, knowledge of Finnish society, guidance and counselling, plans for reforming education and knowledge of the administrative aspects of education. It is called a factor of general pedagogic knowledge.

Factor scores were computed for each subject to investigate the relationships of the backgroud variables to the factors. The background variables are as follows:

41. the length of the study of the language at the university (scale 1-4)
42. studies taken in education (scale 0-3)
43. teaching experience (scale 1-5)
44. the length of the time spent in the foreign country (scale 1-5)

The means and standard deviations of the variables are to be seen in Table 5 (Appendix 7) and the intercorrelations of the background variables and the factor scores in Table 6.

Multiple regression analysis was computed with the background variables as predictors and the factor scores as criteria (Table 7; Appendix 7). Factors IV (a factor of written production) and V (a factor of changes caused by the comprehensive school reform) were the only ones whose variances were significantly explained by the predictors. It is, however, to be remembered that even though there may be a statistical significance in the degree of explanation it may still remain low (Leino, J. 1975) as is the case here when the multiple correlation coefficients are only .11. Because of the low intercorrelations of the variables, it is possible to interpret standardized regression coefficients (Leino, J. 1975). The best predictor of the factor of written production was the length of the study of the

language at the university. The factor of changes caused by the comprehensive school reform was also explained best by the same variable as well as studies taken in education.

In order to study the relationsip between the language and the factors, on the one hand, and between the type os school where the teachers work and the factors, on the other, one-way analysis of variance was resorted to because these variables represent nominal scales.

Based on the language the subjects were divided into the following groups: English =1, Swedish =2, German =3 and others (French and Russian) =4. Language was significantly related to Factor I, a factor of didactic knowledge, as seen in Table 8 (Appendix 8). The means and standard deviations of the factor scores of each group, numbers of observations and Student T-test for pairs of means are given in Table 9-10 (Appendix 8). As is to be seen in the Tables, teachers of Swedish and German rated didactic knowledge significantly more important than teachers of English or teachers of the other languages did. Language was also significantly related to Factor V, a factor of changes caused by the comprehensive school reform (Table 11, Appendix 8). The means and standard deviations of the factor scores and Student T-tests are to be seen in Table 12-13 (Appendix 9), which show that teachers of Swedish rated the content areas loaded on this factor significantly more important than the other groups had done.

Based on the type of school the teachers were divided into two groups: those with no comprehensive school experience (group 1) and those who have experience with comprehensive schools (group 2). This variable was significantly related to Factor IV, a factor of written production, Factor V, a factor of changes caused by the comprehensive school reform, and Factor VII, a factor of general pedagogic knowledge, as is shown by one-way analyses of variance in Tables 14, 16 and 18 (Appendices 9-10). Table 15 shows that those with no comprehensive school experience rate in-service education in teaching and evaluating written production significantly more important than those who have comprehensive school experience. This can be attributed to changes in the school leaving examination.

Table 17 (Appendix 10) shows that those with comprehensive school experience rate content areas loaded on the factor of changes caused by the comprehensive school reform significantly more important than those with no such experience. Table 19 (Appendix 10) shows that teachers with comprehensive school experience rate also general pedagogic knowledge significantly more important than the others.

4. The frequencies of the teachers' answers to the question of"whose responsibility arranging in-service education should be?" are to be seen in Table 20 (Appendix 11). The question itself was badly formulated one since the type of responsibility was not specified. Many of the teachers, how-

ever, made a specification by telling that financially the National Board of Schools should be the responsible party, but otherwise the responsibility should lie with the Universities or Teachers' Associations. The question of the extent to which the teachers themselves should and could be responsible for their own in-service education, is problematic. On the one hand, teacher participation is encouraged (e.g. Rivers 1975) and on the other hand doubts are cast upon the adequacy of the methods that are based on teachers' "sharing" experiences (Ogletree et al. 1964).

Thirty-nine of the teachers gave free comments on in-service education, most of which were concerned with the time when it should be arranged. The teachers were in favour of in-service education being arranged during the terms with a full salary; holidays should not be spent on it, an idea which is also shared by Jonston (1971). He, however, considers the great need for further training which will make it necessary for teachers to sacrifice their own time. The urgency of in-service education was emphasized by the techers of this study too. Some of them were in favour of evening courses held at the academic level. On the other hand, however, teaching and studying takes time and energy and disturbs the continuity of the activities (Armstrong 1968), for which reason the need for sabbatical years has been generally acknowledged (e.g. Armstrong 1968; CCC/EGT 73; Johnston 1971; Lee 1974) and was also greatly emphasized in the free comments given by the teachers.

The teachers had considered study in the foreign country where the language is spoken to be the most important item in the questionnaire, and the free comments also stressed its importance. It has been recommended that the university training of foreign language teachers should include one year's residence in the foreign country (CCC/ESR 69). This recommendation has not been followed here; the length of stay abroad being, in most cases, three months and that has been required only for the highest degree in language. The compulsory in-service education that the teachers had received so far was criticized on account of incompetent teacher trainers; the occasions arranged by the Language Teachers' Association were criticized by few of the teachers because the foreign lecturers had been English, or Swedish, hardly ever German and never French.

4. Discussion

The study will be discussed in terms of organizing in-service education, which involves planning, decision-making, implementation and evaluation. We have information available on the areas where foreign language teachers feel the greatest need for in-service education. These are "study in the country where the language is spoken" and "developing the teacher's oral ability". The latter is most efficiently improved through the former. Now that the criterion of native-like ability has been abandoned and communicative

ability is greatly emphasized, it would be particularly necessary for teachers to have repeated opportunities to practice their own oral ability in natural, communicative situations in the foreign country. Items concerned with the instruction of the language itself and pupil motivation were also considered to be among the most important ones, which would mean increasing the amount of time devoted to the study of language didactics or applied linguistics. These have been neglected fields of study in our country, so far. The results concerning the whole group involve planning and decision-making at the highest administrative level since in-service education organized for foreign language teachers would, in principle, have to be different from further training arranged for other groups of teachers. It would also require more resources, than are available at the present, on account of the teachers' study in the foreign country.

We have also information available on the extent to which teachers agree on the importance of the items. The content areas with the greatest disagreement, as judged by the standard deviations, would require differentiation. Organizing in-service education for those areas could happen at the local level, which would make it easier to give attention to the local conditions and needs. For example, the situation in which one has to teach the foreign language simultaneously to pupils from different classes is typical of small schools in the countryside. Teachers who are faced

with that situation would have to be prepared for it and taking care of the needs of teachers, in this particular case, would be the responsibility of the local school authorities.

Further information on the need for differentiation was sought by means of investigating the relationship between tha ratings and the background variables. The analyses of variance yielded a few statistically significant differences, and so did the regression analysis in two cases but the degree of explanation remained low. The results will be discussed in the following.

Those who had no experience with the comprehensive school considered in-service education in teaching written production more important than those who have experience with the comprehensive school. Written production was also best explained by the length of the study of the language at the university, which is natural since those who have taken the highest university degree in the foreign language most often teach at the senior secondary school level and are faced with the changes that have taken place in the school leaving examination. The item of "teaching written production" had also the greates standard deviation. Differences between the needs of the teachers with comprehensive school experience and others were also seen in the fact that the former considered general pedagogic knowledge and areas affected by the school reform more important than the latter. The

differences in the ratings of the teachers of different languages were slight; there was some indication that the teachers of those languages whose status was affected by the school reform consider didactic knowledge more important than the others.

The generalizability of the results, as has already been mentioned is limited by the low number of returns, on the one hand, and by the fact that there is no information available on the number of the language teachers who do not belong to The Finnish Language Teachers' Association, from whose register the sample was drawn, on the other. It is evident that the greatest number of those who are not members of the Association are class teachers who have specialized in a foreign language. In most cases specialization means that the final examination in the foreign language is at the lowest level ("approbatur"). It is quite reasonable to assume that the greatest need for in-service education felt by these teachers would be in the field of subject-matter competence.

There are still many problems that remain unsolved like the question of strategies, for example. How is one to organize in-service education? Should it be compulsory or voluntary? In the former case, how is one to motivate teachers? An important question, also raised by Sjödal (1967), is that of evaluation: should the results of in-service education be evaluated and in what way? Very little attention has been given to this aspect of further education.

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Appendices

Appendix 1

Categories of teacher evaluation (based on Valette et al. 1972)

Personal qualifications:

Subject-matter Competence	Professional Competence	Personal Attitudes
1. Mechanical Skills	1. Mechanical Skills	1. Receptivity
Perception	Perception	2. Responsiveness
Reproduction	Reproduction	3. Appreciation
2. Knowledge	2. Knowledge	4. Internalization
Recognition	Recognition	5. Characterization
Recall	Recall	
3. Transfer	3. Transfer	
Reception	Reception	
Application	Application	
4. Communication	4. Communication	
Comprehension	Comprehension	
Self-expression	Self-expression	
4. Criticism	5. Criticism	
Analysis	Analysis	
Synthesis	Synthesis	
Evaluation	Evaluation	

Effectiveness:

Pupil Achievements:

Subject-matter Taxonomy

1. Mechanical Skills
   Perception
   Reproduction
2. Knowledge
   Recognition
   Recall
3. Transfer
   Reception
   Application
4. Communication
   Comprehension
   Self-expression
5. Criticism
   Analysis
   Syntehesis
   Evaluation

Affective Taxonomy

1. Receptivity
2. Responsiveness
3. Appreciation
4. Internalization
5. Intergration

Appendix 2

Dear Language Teacher,

For the purpose of arranging in-service teacher education in a way that teachers consider useful, it is necessary to investigate the areas in which teachers feel the pre-service education they have received to be insufficient. An attempt is made by means of the following questionnaire to find out the areas which teachers think should be given priority in in-service education. The undersigned has contacted representatives of the Finnish Language Teachers' Association who consider the questionnaire. Information on the results will be given to teachers in Tempus.

Instruction as to how to do the rating:
Rate the importance of each item using the scale 1-5 in the following way:

5 =extremely important
4 =very important
3 =important
2 =quite important
1 =not important

Use the values that are in the middle of the scale (2-4) relatively more often than the values that are at the ends of the scale (1 and 5). Mark your rating on the line in front of each item.
Return the questionnaire within a week if possible.
For further information contact the undersigned.

Thanking you for the trouble you have taken

Anna-Liisa Leino
tel. (work) 90/650211/471
(home) 90/541568

Appendix 2

____1. official plans of curriculum development
____2. evaluation of oral ability
____3. pupil-centered activities (e.g. group-work, individual work)
____4. teaching written production
____5. questions concerning discipline
____6. teaching mixed-ability groups
____7. observing foreign language instruction (e.g. in experimental schools or institutes of teacher education)
____8. getting familiar with the instruction of other subjects
____9. motivating pupils
___10. decreasing learning difficulties
___11. new instructional materials
___12. differentiation
___13. co-operation between pupils
___14. teaching listening comprehension
___15. teaching a foreign language in different courses after streamimg has taken place
___16. evaluation of listening comprehension
___17. assigning grades
___18. teaching speaking
___19. testing vocabulary and structures
___20. evaluation of reading comprehension
___21. objectives in foreign language instruction at different levels
___22. teaching a foreign language simultaneously to pupils from different classes
___23. planning instruction
___24. knowledge of the Finnish society
___25. developing the teacher's oral ability
___26. language learning theories
___27. knowledge of different varieties of the language (e.g. official language, informal language, slang)
___28. teaching reading comprehension
___29. study in the country where the language is spoken
___30. knowledge of general linguistics (e.g. what the language is, how it is studied)

Appendix 2

___31. knowledge of research on foreign language learning and teaching
___32. evaluation of written production
___33. foreign language instruction in schools to which pupils go to do further studies or from which they come
___34. using AV-materials
___35. guidance and counselling
___36. plans for reforming education
___37. complementary instruction
___38. knowledge of the administrative aspects of education

1. Whose responsability should in-service education mainly be ? (mark a cross)

national board of schools _____
teachers' associations _____
institutes of teacher education of the universities _____
somebody else. Who _____

2. What language or languages do you teach and what grades do you have in those languages ?

Language (major first)	no grade	the grade approbatur	cum laude	laudatur

3. What grade do you have in education ?

laudatur _____
cum laude _____
approbatur _____
no grade _____

Appendix 2

4. How long have you worked as a teacher ?

   2 years at the most _____
   over 2 years, 4 at the most _____
   over 4 years, 8 at the most _____
   over 8 years, 16 at the most _____
   over 16 years _____

5. How long have you been in the country whose language you teach as your major ?

   I have not been there _____
   3 months at the most _____
   over 3 months, 6 months at the most _____
   over 6 months, 1 year at the most _____
   over 1 year _____

6. In what school do you teach ?

   senior secondary school _____
   primary school _____
   civic school _____
   comprehensive school _____
   junior secondary school _____
   other than the above mentioned. What ? _____

Comments on in-service education:

Appendix 3

Table 1. The Means and Standard Deviations of the Items (N=117)

	$\bar{x}$	s
1.	2.94	0.82
2.	3.09	0.84
3.	3.32	0.86
4.	3.62	1.04
5.	2.82	1.24
6.	3.44	1.14
7.	3.53	1.09
8.	1.78	0.61
9.	3.61	0.88
10.	3.47	0.89
11.	3.45	0.88
12.	3.25	0.74
13.	2.58	0.75
14.	3.60	0.86
15.	3.41	0.91
16.	3.22	0.94
17.	3.50	0.85
18.	3.77	0.86
19.	3.25	1.01
20.	3.23	0.87
21.	2.88	0.88
22.	2.43	1.08
23.	3.27	0.89
24.	1.84	0.81
25.	4.03	1.04
26.	2.43	0.98
27.	2.34	0.82
28.	3.44	0.86
29.	4.38	0.88
30.	1.85	0.87
31.	2.70	0.89
32.	3.63	0.87
33.	2.51	0.82
34.	3.44	1.09
35.	2.31	0.88
36.	2.68	0.95
37.	3.27	0.98
38.	2.04	0.81

Table 2. Intercorrelations of Items. (N=117)

1																																					
2	12																																				
3	-02	-02																																			
4	-14	-02	08																																		
5	12	10	06	-14																																	
6	09	06	17	03	16																																
7	-04	-04	09	01	10	11																															
8	-09	09	06	-11	05	05	16																														
9	09	-02	15	-02	33	16	05	15																													
10	12	10	19	08	27	33	04	08	44																												
11	15	00	20	19	04	-07	16	01	21	24																											
12	05	07	14	-11	20	48	07	16	36	55	09																										
13	10	08	07	-07	22	16	-05	14	41	55	16	44																									
14	-01	15	08	21	07	02	-01	-01	-02	07	26	01	28																								
15	-07	-08	03	-24	10	30	17	08	10	08	-15	07	15	07																							
16	-07	26	17	15	04	08	08	08	08	05	20	03	16	59	10																						
17	16	13	11	14	-02	12	09	-04	19	24	21	05	16	27	11	47																					
18	-08	28	08	05	-01	-02	07	00	07	01	11	00	08	32	01	29	31																				
19	-09	-09	08	23	08	-14	-01	-05	04	-05	24	-09	07	44	-06	46	30	19																			
20	-08	19	12	31	05	19	16	14	00	06	30	28	04	55	-01	70	31	22	53																		
21	-04	07	07	-01	23	20	-01	26	28	20	25	28	30	20	01	21	16	17	18	25																	
22	12	21	-03	-15	25	28	09	04	09	07	-12	12	25	13	29	15	07	14	03	13	24																
23	31	07	14	-17	01	05	07	09	29	25	14	18	33	23	12	18	27	27	10	06	27	18															
24	14	06	06	-11	16	-12	02	28	24	28	12	25	39	19	-04	17	13	07	04	04	19	13	37														
25	-05	-02	-11	06	20	-05	18	-10	15	-07	07	-13	-09	18	14	08	02	23	23	10	13	-02	20	15													
26	12	01	01	-10	02	-08	-03	24	-02	07	09	11	11	-02	-02	08	01	00	-08	-07	06	-02	17	28	-03												
27	00	09	-07	13	10	-10	04	13	11	03	21	-05	-02	07	-15	11	02	06	07	09	03	-10	13	20	25	24											
28	-02	04	02	34	05	03	06	03	02	07	37	05	13	51	-16	43	16	24	43	68	26	01	12	13	17	01	10										
29	-05	-03	-09	-02	-04	07	07	01	-01	-15	-04	-04	-07	-06	21	-07	03	-05	-04	03	01	-03	-03	03	33	15	20	01									
30	11	03	-10	-01	13	-17	-13	30	-03	-12	08	01	-04	-07	-12	-07	-03	07	20	-07	10	-03	15	17	11	34	38	10	22								
31	19	12	-01	-19	01	-04	05	35	05	14	01	16	12	-08	-03	-03	-02	06	-02	-04	06	-05	21	21	-09	60	22	04	18	42							
32	-07	12	-12	68	11	00	04	-13	-09	-01	11	-15	-20	14	-09	20	09	02	15	28	-09	-04	-11	-09	09	-10	07	25	00	-11	-11						
33	09	01	01	-01	08	-03	06	20	11	-04	05	-01	08	-12	-10	02	06	-08	02	04	10	-06	22	05	-05	19	16	00	-02	28	22	06					
34	04	13	14	-07	18	09	10	-01	28	09	21	17	28	16	10	15	11	17	10	16	11	-03	13	03	25	-03	-02	15	06	-06	-11	-04	13				
35	12	11	03	-26	25	09	-10	17	24	13	07	20	41	15	06	14	06	06	07	04	16	23	46	46	15	19	17	09	-01	14	04	-20	20	33			
36	30	02	02	-17	11	07	03	07	31	22	13	26	21	04	07	07	15	12	02	-04	09	24	44	38	13	19	13	07	16	16	17	-15	15	18	35		
37	06	05	11	-08	24	16	12	07	12	17	-04	11	05	-04	20	-09	11	14	-08	-02	17	25	06	-07	-02	07	-15	05	-02	03	05	-07	03	06	06	19	
38	12	10	-09	-10	26	44	00	24	19	10	-03	13	14	02	08	-11	09	10	-11	-17	19	15	23	34	17	40	16	-04	10	26	24	24	01	11	35	35	27
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37

Appendix 5

Table 3. Unrotated Factor Matrix (N=117)

	I	II	III	IV	V	VI	VII	h^2
1.	.20	.21	.03	-.06	-.10	.07	.37	.23
2.	.22	-.06	-.01	.03	.07	-.20	.28	.18
3.	.19	-.05	-.20	-.13	-.08	-.05	-.12	.11
4.	.02	-.58	.09	-.40	.33	.25	.11	.69
5.	.35	.17	-.15	.11	.12	.13	-.14	.23
6.	.25	.07	-.47	-.10	.36	-.20	-.03	.47
7.	.12	-.06	-.06	.06	.24	-.06	-.14	.10
8.	.28	.21	.19	-.15	.05	-.32	-.23	.34
9.	.48	.19	-.21	-.10	.07	.30	-.14	.43
10.	.48	.17	-.37	-.43	.05	.13	.01	.60
11.	.38	-.26	.09	-.22	-.11	.20	-.13	.34
12.	.44	.28	-.36	-.32	.08	-.05	-.15	.53
13.	.57	.21	-.29	-.17	-.19	.07	-.03	.52
14.	.47	-.51	.00	.15	-.16	-.08	.06	.54
15.	.13	.14	-.29	.33	.24	-.19	-.05	.32
16.	.51	-.58	-.03	.10	-.16	-.25	.05	.69
17.	.42	-.26	-.08	.02	-.03	-.05	.27	.33
18.	.33	-.21	.07	.24	.07	-.07	.11	.25
19.	.30	-.53	.19	.13	-.14	.02	-.14	.46
20.	.44	-.69	.00	-.03	.03	-.28	-.11	.76
21.	.47	-.02	-.08	-.01	.04	-.08	-.15	.26
22.	.30	.10	-.24	.26	.13	-.20	.19	.32
23.	.58	.18	.08	.13	-.15	.09	.21	.46
24.	.52	.22	.19	-.03	-.18	.12	.05	.40
25.	.22	-.13	.19	.40	.25	.33	-.17	.46
26.	.25	.36	.48	-.19	.07	-.21	.04	.50
27.	.23	.00	.47	-.06	.10	.16	-.10	.33
28.	.44	-.55	.16	-.09	.00	-.02	-.14	.54
29.	.04	.09	.24	.25	.36	.00	-.14	.28
30.	.19	.20	.59	-.02	.05	-.05	-.09	.44
31.	.25	.35	.46	-.26	.07	-.35	.01	.60
32.	-.05	-.52	.12	-.24	.42	.18	.32	.66
33.	.16	.13	.27	-.13	-.01	-.02	.03	.13
34.	.35	-.03	-.13	.18	.02	.22	-.14	.24
35.	.53	.27	.06	.21	-.19	.15	.03	.45
36.	.48	.30	.09	.13	.03	.16	.18	.40
37.	.19	.17	-.17	.09	.27	-.12	.08	.20
38.	.36	.38	.23	.10	.25	.08	.13	.42
Eigen-values	4.77	3.52	2.29	1.43	1.17	1.14	0.88	15.20
Eigen-values as a percentage of the number of variables	12.5	9.3	6.0	3.8	3.1	3.0	2.3	40.0

Table 4. Varimax-rotated Factor Matrix (N=117)

	I	II	III	IV	V	VI	VII	h^2
1.	.06	-.08	.09	.03	.03	-.12	.45	.23
2.	-.03	.20	.08	.08	.25	-.13	.20	.17
3.	.29	.13	-.04	-.06	.02	-.08	-.05	.11
4.	.03	.24	-.07	.75	-.18	.03	-.17	.69
5.	.32	.01	.02	-.10	.17	.28	.13	.23
6.	.40	.01	-.08	.09	.53	-.06	-.10	.46
7.	.09	.08	.04	.05	.20	.16	-.14	.10
8.	.19	.07	.50	-.17	.12	-.03	-.10	.34
9.	.57	.00	.01	-.01	.04	.25	.22	.43
10.	.72	.00	.03	.15	.10	-.11	.20	.60
11.	.31	.35	.09	.15	-.27	.10	.06	.34
12.	.67	-.05	.13	-.04	.22	-.09	.05	.53
13.	.61	.12	.04	-.16	.06	-.05	.32	.52
14.	.06	.71	-.08	.01	.01	.04	.14	.54
15.	.06	-.01	-.11	-.19	.50	.15	-.02	.32
16.	.07	.82	-.04	.00	.09	-.07	.06	.69
17.	.11	.43	-.05	.13	.14	.08	.29	.33
18.	-.07	.39	.02	.02	.19	.15	.18	.25
19.	-.04	.62	-.01	.02	-.19	.18	-.05	.46
20.	.11	.82	.03	.15	.10	-.02	-.19	.76
21.	.33	.28	.15	-.08	.15	.12	.06	.26
22.	.07	.13	-.06	-.12	.48	.01	.23	.32
23.	.20	.21	.17	-.14	.07	.11	.56	.46
24.	.27	.14	.30	-.14	-.10	.12	.43	.40
25.	-.08	.16	-.02	.04	.02	.65	.07	.46
26.	.01	-.07	.68	-.02	.02	-.03	.17	.50
27.	-.01	.10	.40	.14	-.20	.30	.09	.33
28.	.14	.66	.11	.20	-.11	.12	-.08	.54
29.	-.16	-.05	.21	.03	.20	.40	-.08	.28
30.	-.12	.02	.60	-.04	-.12	.20	.09	.44
31.	.03	-.04	.75	-.05	.07	-.14	.09	.60
32.	-.14	.20	-.07	.77	.00	.03	-.03	.66
33.	.03	.01	.32	.03	-.08	.01	.13	.13
34.	.26	.17	-.11	-.09	.04	.32	.14	.24
35.	.24	.13	.14	-.29	.01	.23	.47	.45
36.	.19	.01	.20	-.07	.13	.22	.51	.40
37.	.12	-.05	.04	.01	.41	.06	.09	.20
38.	.08	-.12	.36	.02	.21	.28	.37	.42
Eigen-values	2.68	3.59	2.39	1.59	1.56	1.41	1.98	15.20
Eigen-values as a percentage of the number of variables	7.1	9.4	6.3	4.2	4.1	3.7	5.2	40.0

Table 5. Means and Standard Deviations of the Background Variables. N=117)

	x	s
41.	3.67	0.54
42.	1.17	0.50
43.	3.54	1.18
44.	3.38	1.27

Table 6. Intercorrelations of the Background Variables and the Factor Scores (N=117)

41										
42	14									
43	-10	16								
44	15	16	23							
I	-18	-14	04	-09						
II	16	07	15	-05	-03					
III	06	-07	-17	06	00	00				
IV	25	-08	-10	-16	00	-04	00			
V	-23	10	-14	-03	07	00	-01	-04		
VI	-03	-05	-04	-18	-01	02	02	00	00	
VII	-05	-10	04	04	09	00	07	06	02	06

Table 7. Multiple Regression Analysis with Factor Scores as Criteria (N=117)

	Standardized Regression Coefficients						
Factors	41	42	43	44	R^2	F	p
I	-.15	-.06	-.11	-.05	.05	1.47	.22
II	.22	.22	-.13	-.12	.07	2.63	.04
III	.04	-.18	-.06	.11	.04	1.28	.29
IV	.29	-.02	-.09	.19	.11	3.57	.01xx
V	-.28	-.20	.17	.02	.11	3.47	.01xx
VI	.00	.00	-.02	-.18	.04	1.03	.40
VII	-.04	.04	-.11	.06	.02	0.54	.71

Table 8. Relation between Language and the First Factor, One-way Analysis of Variance

Source	Sum of Squares	df	F	p
Factors and Interactions	97435	3	3.45	.02^{x}
Residual	1062564	113		
Total	1160000	116		

Table 9. Means, Standard Deviations and Numbers of Observations

	1	2	3	4	Total
$\bar{x}$	478.05	523.41	573.81	466.93	500.00
s	101.59	80.86		93.48	100.00
N	57	31	17	12	117

Table 10. Student T-test for Pairs of Means

		1	2	3
2	T	2.45^{x}		
	df	86		
3	T	2.09^{x}	0.21	
	df	72	46	
4	T	-0.33	-2.28^{x}	-2.09^{x}
	df	67	41	27

Table 11. Relation between Language and the Fifth Facots. One-way Analysis of Variance

Source	Sum of Squares	df	F	P
Factors and Interactions	90738	3	3.20	.03^{x}
Residual	1069261	113		
Total	1160000	116		

Appendix 9

Table 12. Means, Standard Deviations and Numbers of Observations

	1	2	3	4	Total
$\bar{x}$	492.81	532.00	447.07	526.46	500.00
s	93.02	101.23	88.26	117.83	100.00
N	57	31	17	12	117

Table 13. Student T-tests for Pairs of Means

		1	2	3
2	T	1.83		
	df	86		
3	T	-1.80	-2.90^{xx}	
	df	72	46	
4	T	1.09	-0.15	2.08
	df	67	41	27

Table 14. Relation between Comprehensive School Experience and the Fourth Factor. One-way Analysis of Variance

Source	Sum of Squares	df	F	p
Factors and Interactions	68462	1	7.21	.01^{xx}
Residual	1091537	115		
Total	1160000	116		

Table 15. Means, Standard Deviations, Numbers of Observations and Student T-tests for Pairs of Means

	1	2	Total	T	df
x	516.45	464.43	500.00	-2.69^{xx}	115
s	93.14	106.23	100.00		
N	80	37	117		

Appendix 10

Table 16. Relation between Comprehensive School Experience and the Fifth Factor. One-way Analysis of Variance

Source	Sum of Squares	df	F	p
Factors and Interfactors	128967	1	14.39	.0002^{xxx}
Residual	1031032	115		
Total	1160000	116		

Table 17. Means, Standard Deviations, Numbers of Observations and Student T-tests for Pairs and Means

	1	2	Total	T	df
x	477.42	548.82	500.00	3.79^{xxx}	115
s	94.94	94.14	100.00		
N	80	37	117		

Table 18. Relation between Comprehensive School Experience and the Seventh Factor. One-way Analysis of Variance

Source	Sum of Squares	df	F	p
Factors and Interfactors	69465	1	7.33	.01^{xx}
Residual	1090534	115		
Total	1160000	116		

Table 19. Means, Standard Deviations, Numbers of Observations and Student T-tests for Pairs of Means

	1	2	Total	T	df
x	483.43	535.83	500.00	2.71^{xx}	115
s	91.63	108.95	100.00		
N	80	37	117		

Table 20. The Frequencies and Percentage of Teachers' Opinions of the Organizer of In-service Education

	f	%
National Board of School	43	36.90
Teachers' Association	32	27.30
Institutes of Teacher Education of the Universities	23	19.60
National Board of Schools, Teachers' Associations	7	5.98
Teachers' Associations, Institutes of Teacher Education	3	2.56
The National Board of Schools Institutes of Teacher Education	4	3.41
National Board of Schools Teachers' Association Institutes of Teacher Education	4	3.41
No opinion	1	0.84

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